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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
LANDAU, MATTHEW C	
ART UNIT	**PAPER NUMBER**
2815	

DATE MAILED: 07/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/723,329	JENDICK, MANFRED	
	Examin r	Art Unit	
	Matthew Landau	2815	

-- The MAILING DATE of this communication appears on the cover sh t with the correspond nce addr ss --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 April 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *49-60 and 62-73* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *62-66* is/are allowed.

6)☒ Claim(s) *49-60 and 67-71* is/are rejected.

7)☒ Claim(s) *72 and 73* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 49-58, 67, and 71 are rejected under 35 U.S.C. 102(e) as being anticipated by Brodsky et al. (US Pat. 6,489,985, hereinafter Brodsky).

In regards to claim 49, Figures 1 and 2 of Brodsky disclose a laser unit for providing markings on a surface of a continuous strip 60 comprising: a beam generator 12/16 (or 30) configured to generate a beam of laser radiation configured to provide said markings in a metal (col. 11, lines 9-13); a beam focuser 20 (flat field lens) (col. 10, lines 40-44), associated with the beam generator, that focuses the laser beam onto said surface; of a beam deflector 20 (galvanometer mirrors) (col. 6, lines 1-10), that effects a controlled deflection of the laser beam; a control unit 24 having a memory that receives and stores a pattern to be engraved on said surface and a processor programmed to operate said laser unit to produce said pattern on said surface of said strip, wherein the control unit is set to control said laser unit to provide laser engraved markings at exact locations on said surface when said strip intermittently is in an immobilized condition (col. 6, lines 12-32). Note that is it inherent that the personal computer 24 has a memory, and this memory stores the pattern. It is also inherent that the computer has a

processor. Also note that in a claim drawn to a laser unit, the type of material the laser engraves/marks is merely an intended use of the laser beam. It follows that any processing performed on the engraved/marked material is also intended use. Therefore, the intended use limitations "on a surface of a continuous strip of metal" and "when said strip intermittently..." do not structurally/patentably distinguish the claimed invention over the laser unit of Brodsky.

In regards to claim 50, the intended limitation "wherein said laser unit is operable to provide about 1-5 μm deep engravings in said surface of said strip" does not structurally distinguish the laser unit of the claimed invention over the laser unit of Brodsky.

In regards to claim 51, Brodsky discloses said processor controls the beam generator 12/16 and the beam deflector 20 (col. 5, line 60 – col. 6, line 32). The intended use limitation "such that at least one pulse of laser radiation outputted by the beam generator forms visible pits in said surface..." does not structurally/patentably distinguish the claimed invention over the laser unit of Brodsky. However, it should be noted that the "strokes" of Brodsky (col. 6, lines 18-20) are visible depressions in the surface, and therefore can be considered pits.

In regards to claim 52, Brodsky discloses said processor controls a time period between subsequent pulses (i.e., pulse rate) (col. 5, lines 60-65). The intended use limitation "such that each pulse has sufficient energy to generate one of said pits" does not structurally/patentably distinguish the claimed invention over the laser unit of Brodsky. However, since each of the "strokes" of Brodsky (col. 6, lines 18-20) (which can be considered pits) are made by a single pulse, each pulse has sufficient energy to generate one of said pits.

In regards to claim 53, it is inherent that the processor calculates the position of the pattern markings before operating the laser.

In regards to claim 54, the intended use limitation "wherein said processor is programmed to determine an optimum engraving path..." does not structurally/patentably distinguish the claimed invention over the laser unit of Brodsky. Furthermore, any engraving path used can be considered to be the optimum engraving path, since no basis is provided for determining what is optimal and non-optimal. Therefore, it is inherent that the processor of Brodsky determines an optimum engraving path.

In regards to claim 55, Brodsky discloses the pattern comprises a number of characters (col. 6, lines 15-18).

In regards to claim 56, Figure 2 of Brodsky discloses the characters are provided sequentially one after another on said surface.

In regards to claim 57, the intended use limitation "wherein said marked articles are opening tabs to be attached to ends for cans" does not structurally/patentably distinguish the claimed invention over the laser unit of Brodsky.

In regards to claim 58, the intended use limitation "wherein said laser is operable to provide the laser engraved markings on said surface of said strip such that..." does not structurally/patentably distinguish the claimed invention over the laser unit of Brodsky.

In regards to claim 67, the intended use limitation "wherein a height of each of the characters is about 1.4-2mm" does not structurally/patentably distinguish the claimed invention over the laser unit of Brodsky.

In regards to claim 71, Brodsky discloses the beam generator 30 is configured to produce laser pulses (col. 6, lines 46-54).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 49, 50, 53-60, 67-69, and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (US Pat. 6,080,958, hereinafter Miller) in view of Brodsky et al. (US Pat. 6,489,985, hereinafter Brodsky).

In regards to claims 49 and 60, Figures 1 and 2A of Miller disclose a laser unit for providing markings 114 on a surface of a continuous strip of metal 312 comprising: a beam generator 212 configured to generate a beam 218 of laser radiation configured to provide said markings in a metal; a beam deflector 216, that effects a controlled deflection of the laser beam; a control unit 236 having a memory that receives and stores a pattern to be engraved on said surface and a processor (column 5, lines 60-65) programmed to operate said laser unit to produce said pattern on said surface of said strip, wherein the control unit is set to control said laser unit to provide laser engraved markings at exact locations on said surface when said strip intermittently is in an immobilized condition (column 7, lines 23-35) before being fed into a processing apparatus 248 structured to mechanically shape the thus-marked strip into marked articles to be included in cans (column 3, lines 64 to column 2, line 9). Miller also discloses said processor is programmed to control said laser unit to provide a large number of visible pits in said surface to produce said pattern within a dwell time when the strip intermittently is in an

immobilized condition (column 7, lines 23-35), the dwell time being less than about 60 ms (column 4, lines 49-52). The difference between Miller and the claimed invention is the beam deflector being arranged intermediate the beam generator and a beam focuser. Using a beam focuser in this type of configuration is extremely common in the art. For example, Figure 2 of Brodsky discloses a beam focuser (flat-field lens) positioned between a target 62 and a beam deflector (galvanometer) (col. 10, lines 25-43). In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of Miller by using the beam focuser of Brodsky for the purpose of decreasing beam divergence, thereby increasing the marking precision. It is also obvious to use the flat-field lens of Brodsky for the purpose of ensuring the beam is perpendicular to the surface to be marked, which is well known in the art.

In regards to claim 50, the intended use limitation "wherein said laser unit is operable to provide about 1-5 μm deep engravings in said surface of said strip" does not structurally/patentably distinguish the laser unit of the claimed invention over the laser unit of Miller.

In regards to claim 53, Miller discloses the processor is adapted to, based on said pattern in said memory, calculate positions of all of said pits on said surface before operating said laser unit to produce said pattern (column 6, line 67 to column 7, line 35).

In regards to claim 54, the intended use limitation "wherein said processor is programmed to determine an optimum engraving path..." does not structurally/patentably distinguish the laser unit of the claimed invention over the laser unit of Miller. Furthermore, any engraving path used can be considered to be the optimum engraving path, since no basis is

provided for determining what is optimal and non-optimal. Therefore, it is inherent that the processor of Miller determines an optimum engraving path.

In regards to claim 55, Miller discloses said pattern comprises a number of characters (column 5, lines 20-30).

In regards to claim 56, Miller discloses said processor is programmed to control the beam deflector 216 such that said characters are provided sequentially one after another on said surface (column 7, lines 23-35).

In regards to claim 57, Miller discloses the marked articles are opening tabs to be attached to ends for cans (column 8, lines 40-55).

In regards to claim 58, Figure 1 of Miller discloses said laser unit is operable to provide the laser engraved markings on said surface of said strip such that each of said marked tabs have said markings on a tab surface between an opening in said tab and bent edge portions of the tab.

In regards to claim 59, the intended use limitation "wherein said control unit is set to control the feeding rate of the strip into the processing apparatus" does not structurally/patentably distinguish the laser unit of the claimed invention over the laser unit of Miller.

In regards to claim 67, Miller discloses a character height of about 3mm (col. 5, lines 25-28), which is considered to be about 2mm.

In regards to claim 68, Miller discloses the beam generator is a YAG beam generator (col. 5, lines 48-50).

In regards to claim 69, Miller discloses a modulator (chopper) 228 to produce laser pulses (col. 5, lines 47 and 48).

In regards to claim 70, Miller discloses the modulator 228 is a Q-switch, since a chopper is a type of q-switch (mechanical q-switch).

In regards to claim 71, Figure 2 of Miller discloses the modulator 228 is part of the beam generator 212, therefore the beam generator is configured to produce laser pulses.

Allowable Subject Matter

Claims 62-66 are allowed.

Claims 72 and 73 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

In regards to claim 62, the prior art of record, either singularly or in combination, does not disclose or suggest the combination of limitations including a lens having a focal length of between about 120-190 mm.

In regards to claim 64, the prior art of record, either singularly or in combination, does not disclose or suggest the combination of limitations including a pulse duration of 25 nanoseconds in a cycle time of 0.1-1 μs.

In regards to claim 65, the prior art of record, either singularly or in proper combination, does not disclose or suggest the combination of limitations including a mode selection element to obtain suitable transverse mode characteristics.

The following is a statement of reasons for the indication of allowable subject matter:

In regards to claims 72 and 73, the prior art of record, either singularly or in combination, does not disclose or suggest the combination of limitations including an average power per pulse is at least 25 kW and a peak power is at least 100 kW.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

Applicant's arguments filed April 14, 2004 have been fully considered but they are not persuasive.

In response to Applicant's arguments regarding claim 49 that "Brodsky et al. is not configured to mark a metal, especially in view of its express teachings that it is used for plastic or resin materials which utilize a much lower power output", as indicated in the above rejection, Brodsky does teach that the laser can be used to mark a metal. Brodsky specifically discloses "laser marking system 30 may be employed for marking other materials, such as metals...." (col. 11, lines 10 and 11). Applicant further argues that Brodsky does not teach certain limitations (for example, the control unit is set to provide laser engrave markings at exact locations on the surface when the strip intermittently is in an immobilized condition) and that these limitations are not intended use since they are positively recited in the claim. However, the examiner maintains his position that these limitations are merely recitations of intended use. Applicant is

claiming a laser unit with a control unit. Applicant does not positively claim a conveyor system to a carry/move a strip of metal, nor does Applicant positively claim a processing apparatus. The control unit controls the laser unit, not the movement of the strip (according to the claim). Therefore, whether or not the strip is in an immobilized condition does not further distinguish the claimed laser unit. The laser unit produces a laser beam that marks a target material. The shape, position, and/or relative movement of that target material are merely intended uses and have no direct impact on the laser unit itself. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). The control unit of Brodsky is capable of controlling the laser to engrave a target that is in an immobilized condition.

In response to Applicant's arguments that "one of ordinary skill in the art would not have combined the teachings of Miller et al. with Brodsky et al. as Brodsky et al. teaches against the use of YAG and CO_2 lasers", the 103 rejection set forth above combines Brodksy's teaching of a beam focuser with the apparatus of Miller. Use of such a beam focuser is extremely common and well known in the art. At no point did the rejection suggest combining the specific type of laser taught by Miller with the device of Brodsky. Whether or not Brodsky teaches away from using the specific type of laser disclosed by Miller is not germane to the above rejection. There

is no reason why the beam focuser of Brodsky cannot be used in the apparatus of Miller. Therefore, Applicant's arguments are not persuasive.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Landau whose telephone number is (571) 272-1731.

The examiner can normally be reached from 8:30 AM - 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone numbers for the organization where this application or

proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Tom Thomas

TOM THOMAS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Matthew C. Landau

Examiner

July 1, 2004